

Industrial

Standardization

and Commercial Standards Monthly

MAY 22 1941

May

Motion Pictures:
Up-to-date Equipment
Standards Underwrite
Artistic Values

(See Page 119)

1941

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Industrial Standardization

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RUTH E. MASON, Editor

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Our Front Cover: A director views a motion picture film before cutting—Courtesy M-G-M Pictures, Inc.

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ASA

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Standardization is dynamic, not static. It means
not to stand still, but to move forward together.

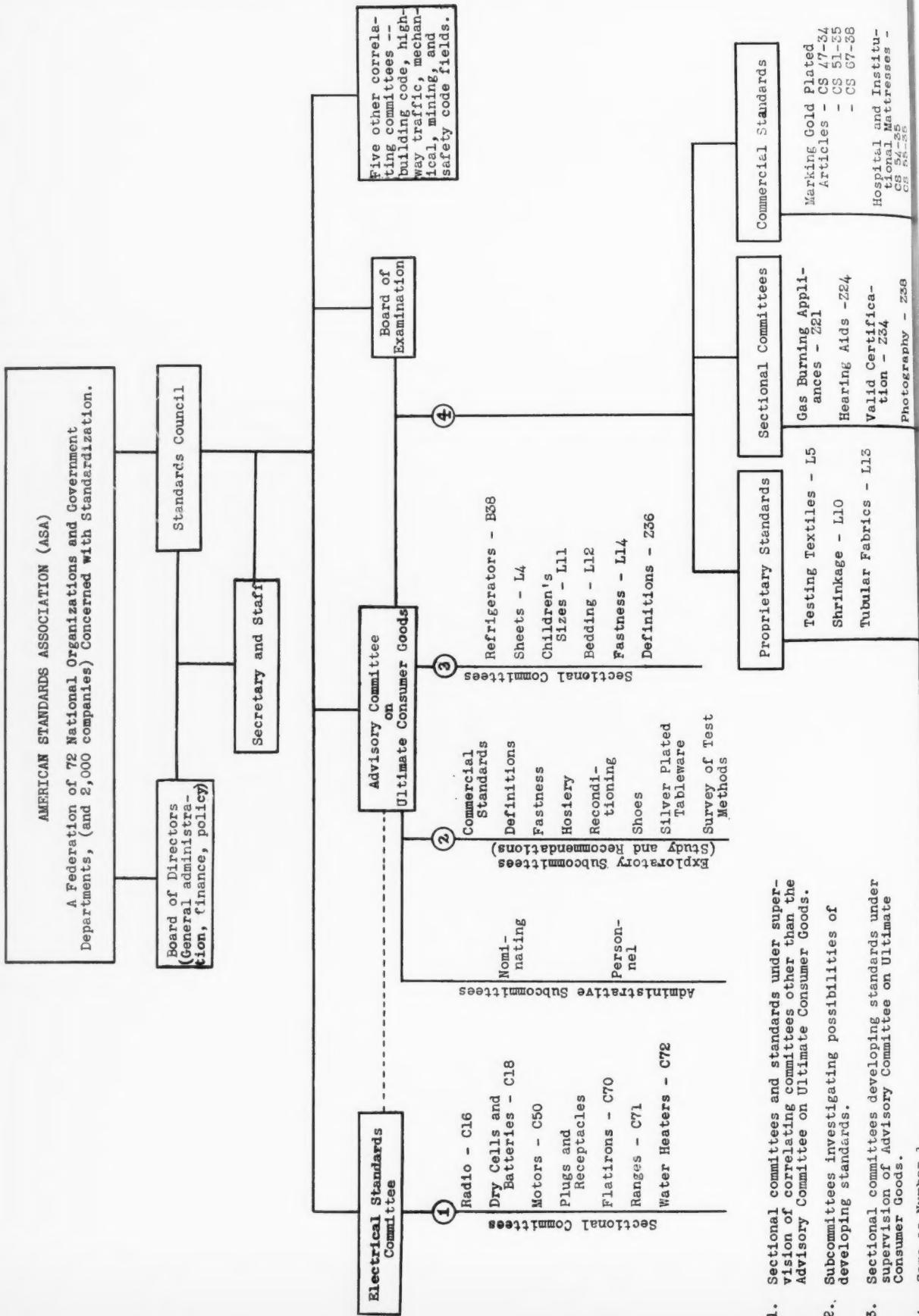
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ASA Machinery for Developing Standards for Consumer Goods



How Sears, Roebuck Uses Informative Labeling

by Fred C. Hecht

*Manager, Informative Label and Package Di-
vision, Sears, Roebuck and Company, Chicago*

THE INFOTAG, Sears' answer to the question "What is informative labeling?" is a tag, folder, label, or package which gives the consumer facts, information that is correct, simple, easy to read, and easy to understand. It answers such questions as: Will it shrink? Are the colors fast in washing, cleaning, sunlight? Is it water repellent? Is it rayon, silk, cotton, wool? How long should it be expected to last? Will it rust, corrode, chip, peel, crack? How long will it give good service? How should it be lubricated, packed, cleaned?

We started making INFOTAGS because we heard the consumer wanted them. We heard she wanted information without pressure; wanted to be able to believe what she read; wanted education in good buymanship; wanted assurance that the answers to her questions given by manufacturers, advertisers, and merchants were bona fide information and not just "sales talks".

Our program was originally started because of the so-called consumer movement which through agitation, publicity, and demands of one sort or another, was making the average customer more acutely conscious of all the facts she should have in order to make an intelligent selection of her own free choice in keeping with her needs and pocketbook.

Labeling Good Business

Women debated this informative labeling question in organized groups, clubs, associations. Manufacturers everywhere were devoting longer sessions of their national conventions to discussing it. Sears sympathized with this movement and we felt it good business to tell our customers specifically and accurately, by means of the informative label, what they were buying.

We ourselves have since discovered many merchandising benefits from these labels which are, in our opinion, of far more immediate importance than the eventual betterment of consumer rela-

tions. Besides the bringing about of better selling, which we shall cover in detail later, INFOTAGS in our company have been responsible to some extent for better buying. For example, in trying to give informative copy which shows the difference between 15-cent, 19-cent, and 25-cent items within a given line, it sometimes reveals that there is no real need for all three items in the assortment. Many lines are being reduced in this manner, making for a better merchandising structure, greater concentration on less number, more specification buying with its consequent savings in cost to Sears, Roebuck and Company

The Sears, Roebuck informative labeling program has been a pioneer in the movement which is now gathering momentum throughout the country and in many lines of merchandising to give the consumer information about the goods she buys. Informative labeling and the development of standard specifications and methods of test move forward hand in hand.

Mr. Hecht, author of this article, is manager of the Informative Label and Package Division of Sears, Roebuck and Company, and has under his supervision in Chicago a large staff of assistants whose efforts are devoted entirely to the development of new labels and new packaging. The techniques and procedures followed are in accordance with those worked out over the past two or three years by the National Consumer-Retailer Council, and some Sears' labels have already been approved by the NCRC.



The "Morning Glow" towel range shows Sears' step-up in specifications, and the type of label approved by the National Consumer-Retailer Council. Sears' labels for 14 towels have already been approved by NCRC.

and their customers. This is, in our opinion, a very real contribution.

Last but not least, the aid INFOTAGS can be in our stores in providing uninformed and sometimes insufficiently trained salespeople with pertinent facts at the point of a sale is the most important reason for the program. The INFOTAG is also a definite help in our stores in holding or clinching a sale when there is no salesperson in sight or immediately available. It acts as a silent Sears salesman, attached to the merchandise, always at hand to tell the consumer about the features of each item.

You will be interested to know that the Informative Label and Package Development Department at Sears is a division of the General Merchandising Office—not advertising—not display—not public relations—but merchandising. The reasons that Informative Labeling is a merchandising function at Sears are:

(1) The merchandising departments are most benefited by it; and

(2) The interest in the movement at our company was originated by our Executive Vice-President, D. M. Nelson, who at that time was vice-president in charge of merchandising, and whose whole-hearted support and that of his successor, T. V. Houser, has made the labeling program a comparatively easy assignment.

With all this as a background, we were pre-

sented with the problem of "How should we informatively label what?" Taking the "what" part of this question first, there are two determining factors:

(1) Does the selling price of the merchandise permit the additional cost of the INFOTAG? and

(2) Does the merchandise itself permit application of a sufficient number of the eight points, which we will presently discuss, to warrant labeling?

Sears are in a unique and advantageous position, making an informative labeling program a much simpler task than it would be for many stores. First of all, Sears buy in tremendous quantities, so that the cost of the label on a particular item does not interfere seriously with its gross profit. Secondly, Sears buy a great deal of its merchandise to specifications, making the passing on of data about these specifications a relatively easy matter. Finally, Sears have one of the most completely equipped, privately owned testing laboratories in the world, making the checking of manufacturers' claimed specifications possible, and consequently, we assume full responsibility for the statements made on the label.

Standard Tests and Specifications Used

Standard tests and government specifications for buying Army and Navy merchandise are used for testing Sears merchandise, whenever applicable, to determine qualities. With the great variety of items that we sell, there are many items for which there are no established tests to determine the exact quality of each item. In these cases our laboratory technicians have devised tests that clearly show which of similar items will give the most wear . . . which item is the best value.

Grade labeling, as you know, has been applied mostly to foods up to now. Since Sears do not sell foods (food sections in our stores are concessions), most of our labeling comes under the informative approach. Often our INFOTAG copy assumes the complexion of grade labeling, though, with the listing of the results of Federal Specification tests, by carrying the "approved by" note of consumer-trusted independent testing groups, and by plainly labeling similar items in a line with "good", "better", and "best" on the INFOTAGS. See the accompanying illustrations of these handlings. When it has been proved that the consumer wants grade labeling on all merchandise we shall be with the first to cooperate.

How Sears Labels

Now what about the "How shall we informatively label" phase of this question? To us, this

comes under the heading of what goes on an INFOTAG. At Sears we have an "8 Point Program for Making INFOTAGS":

1. Trade Names
2. Selling Copy and Related Items
3. Technical Specifications
4. Care and Handling Instructions
5. The Guarantee
6. Trade-up
7. Time Payment Plan
8. Color and Design

In planning each new informative label, as many of these eight points as possible are incorporated in the new copy. The specific merchandise, the retail selling habits, the consumer buying habits, and possible improvements over the established way of doing the job determine what points are applicable.

I. Trade Names

As merchants, it is important to us that we firmly impress Sears' own brand names upon the minds of the consumers as reliable standards of quality. INFOTAGS do this in a positive way. With Sears' many diverse lines of merchandise, no one trade-name policy could be adequate for all cases. Depending upon the merchandise, accepted trade practices, and qualities in the line, one of three trade-name policies is used:

One strong overall name, or

Overall name with strong sub-names, or

Many single strong names with or without sub-names

The first policy, one strong overall name, is used when every item in the line is under one trade name, as with our radios—every radio is a Silvertone, though there are differences in cabinets, quality, performance, etc.

The second policy, overall name with strong sub-names, can be illustrated by our hosiery trade names: Royal Purple, Beautifilm, Royal Purple Carefree, Royal Purple Desirables. Each sub-name is indicative of a quality difference feature.

The third policy, many single strong names with or without sub-names, is illustrated by our line of lawn mowers: FULTON Kwik-Kut, FULTON Sunrise, DUNLAP, DUNLAP Defiance.

These tags show the specifications for three of Sears' lawn mowers, all of which have a 14-inch cut.

Top is the Kwik-Kut at \$3.95; center the Defiance at \$5.95; and below the Craftsman-Companion at \$8.95. The entire series includes the Sunrise at \$3.45; the Dunlap at \$4.95, and the Craftsman at \$10.95. These three tags, however, illustrate the difference in the Sears' specifications for the different priced mowers.

CRAFTSMAN. Each trade name justifies its existence by being used to identify merchandise within set quality standards. As new INFOTAGS are planned, weak or inconsequential trade names



are weeded out. Related items are added to brand lines already established.

2. Selling Copy and Related Items

Mr. and Mrs. Consumer want to know about the merchandise before they buy. Features listed on the INFOTAG immediately give them an accurate description—even before a salesperson is available. Salespeople refer to the features on the INFOTAG for facts that clinch sales.

Answers to the questions "What is it?" "What will it do?" are expressed in outline form with the emphasis on "sell". These are the answers which interest the customer most and which provide the salesperson with ideas on which he may elaborate; in other words, it provides a handy outline chart for the salesperson to use in putting across the few final punches in closing the sale. We try to avoid "dry as dust" copy. We do not ignore what advertising men refer to as "emotion in promotion". Frankly, we try very hard

to take advantage of the very important emotional appeal. We don't say simply "rayon and cotton". We say, instead, "shimmering rayon and cotton damask—50% rayon for beauty, 50% cotton for strength".

3. Technical Specifications

INFOTAGS list the hidden features not apparent through sight or "feel", giving construction and materials used, backed by Sears Laboratory tests and conforming to the Federal Trade Commission and other governmental rulings, and providing an authentic description that the consumer has learned to trust. Needless to say, the claims made on the label must be true. Every fact stated on the INFOTAG is checked and proved by exhaustive laboratory tests. Sears Testing Laboratory is one of the largest of its kind. The INFOTAG tells the consumer about the specific uses of the item, and how it may be used for one purpose, but not for another, thus preventing over-selling and consequent dissatisfaction. Hard-to-remember mechanical specifications are always before the salesperson for quick reference.

4. Care and Handling Instructions

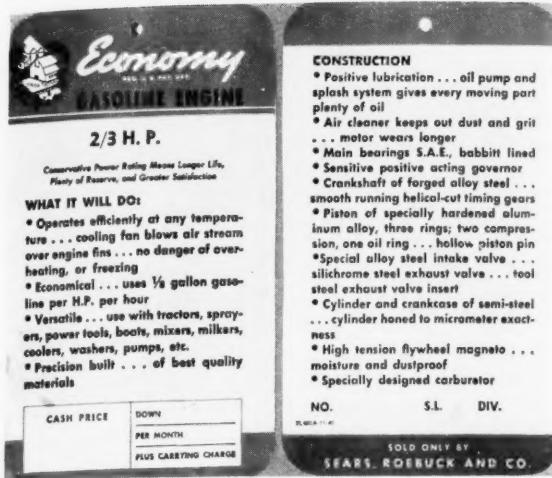
After the sale is made, instructions are needed on many items to insure maximum life and more satisfactory use of the merchandise. When an INFOTAG is attached, with adequate information supplied, returns are cut down. The returned-goods evil, long a nightmare to all retailers, is caused in a great measure, it is generally conceded, by improper care, handling, and use on the part of uninformed customers. Salespeople in a large majority of instances are unable to answer customer inquiries about washing instructions or technical handling which make for longer life and more satisfactory use. We do not claim that Informative Labels will put an end to returned merchandise, but we believe they will eliminate, to a large degree, returns caused by misuse or improper care with consequent customer dissatisfaction and will alleviate the adjustment managers' problem.

5. The Guarantee

The established integrity of Sears and the mail order policy of "Guaranteed Satisfaction" are widely recognized, but a guarantee on the INFOTAG gives an added punch to the sales appeal. Many a sale is completed by the reassurance of a Sears guarantee on the goods. In some cases the guarantee is a legal-looking bond certificate as a separate insert. The INFOTAG in that case carries a line mentioning the guarantee but depends upon the more lengthy insert to tell the complete terms.



This cretonne meets sunfast requirements of a Sears' laboratory test, and also wash-fast requirements of a Federal Specification, according to this tag.



Standards of other organizations are sometimes referred to. This tag shows that the engine bearings meet the requirements of an SAE standard.

6. Trade-up

The copy on the INFOTAGS for a line of similar items at different prices shows the step-up in quality as price increases. This information makes it possible for the consumer to make a free choice. It's practically "cafeteria" selling! By examining the labels the consumer can readily see why one item is \$1, \$2, or \$3 more than another similar item. Quality differences are clearly pointed out on the INFOTAGS. Added features for more money tend to increase unit sales; the consumer often buys a better and higher-priced item than first considered. This trade-up policy helps Sears' buyers choose items that have real differences as price increases. Sometimes there have been too many items too similar in quality in a line. Through making up new INFOTAGS this has been brought to light and the buyers then have cut down the assortment, resulting in much better merchandising.

7. Time Payment Plan

As Mr. and Mrs. Consumer read the INFOTAG on a big ticket item they are reminded that they don't have to put down the cash before they can take it home. They can use our convenient Time Payment Plan! Buying on credit is a powerful aid to holding customers and a sure way for first preference when they are ready to make future additional big ticket purchases. Smaller purchases may be grouped so they total \$10 or more and placed on our Time Payment Plan, too. Selling on time has proved to be a profitable way to sell more Sears merchandise.

Annual reports released recently show that the sales of both Sears-Roebuck and Montgomery Ward and Company, the two largest mail order houses in the country, showed increases of around 10 per cent during the past year. Mail order sales can be expected to increase with a rise in payrolls and in farm income but *Business Week* attributes part of this increase to the fact that the mail-order industry "has earned a lot of goodwill by its demonstrated willingness to play along with consumer-movement principles, instead of kicking consumer groups on the shins."

One outstanding example of this, *Business Week* explains, is agreement in the current catalogs of most of the mail-order houses on the designations for sizes of children's clothing. For example, a size 8 knicker suit, the catalogs agree, is for a boy 47 to 49 inches tall and with 24 to 26 inch chest measurement. A mail-order customer no longer needs to take a shot in the dark when she orders a size and when the suit fails to fit return it and order another size. A considerable reduction in returned goods is expected to result.

Agreement between the mail-order houses on sizes has been promoted by publication of the data compiled by the U. S. Bureau of Home Economics from the WPA measurement of 150,000 children. Data from these studies are also the basis for the work of the ASA Committee on Standardization of Sizes of Children's Garments. A standard for boys' body sizes has already been prepared by the sectional committee and is now before the American Standards Association for approval.

8. Color and Design

"Art" is incorporated in INFOTAGS only to the extent that it will help do a better merchandising job. The Consumer Public has definite color preferences for each type of merchandise; there is a "natural" for every job. These are considered in establishing color schemes. Color

is used to distinguish between items similarly packaged and clearly defined price groups. Design is used to make a pleasing arrangement of the parts included on the INFOTAG.

Our policy is to use just one tag, one label, or one folder as the INFOTAG. The complete merchandise story is told on one compact piece, avoiding the cluttered look that exists when there are many unrelated tags, labels, and folders attached to each item. As many of the "3 Points" as are applicable to the specific item are covered in the copy on the single INFOTAG. About the only exception to this policy is when the guarantee is presented as a separate certificate in an envelope along with the regular INFOTAG.

Must Sell Labeling to Sears' Buyers

It is the responsibility of those of us in the label department to present the idea of informative labeling to the merchandise-buying departments. To accomplish this bit of salesmanship, separate meetings are held with each buying department and the meaning of informative labeling and the reason Sears are interested in it are explained to the buyers and supervisors.

The talk given these buyers is practically identical with the information given in this article. The Label and Package Department approaches these meetings with a thorough knowledge of the type of merchandise to be labeled and, in most cases, with a proposed plan for informatively labeling each important item or type of item in the lines. This proposed plan includes rough sketches, suggested color schemes, suggested methods of applications and detailed facts as to the number of copy changes necessary and an approximate cost break-down of the total job.

After the buyers are completely sold on the idea of informatively labeling their merchandise, they meet with the copywriter and decide on the points to be covered. Final copy is approved by the supervisors and buyers, approved by Sears Laboratory for accuracy of claims, approved by the Trade Practice Committee for Federal Trade Commission and other governmental regulations, and checked for compliance with house policy.

After the buyer has received from the Label Department a comprehensive or rough sketch giving him general layout, color scheme, and final copy, two courses are open to him. He may pass these suggestions on to his manufacturer for final printing (before final printing the Label Department must OK the final proof). The other course open to the buyer is to allow the Label and Package Department to complete the steps for him and his manufacturer. The finished drawing and the printing will be arranged for through our department.

In either case, the cost incurred must be considered a part of the cost of the merchandise. This is now part of the general buying problem at Sears. The informative label is now being regarded as important, and as necessary to the final purchase as the buttons on a shirt or the shoe laces in shoes.

Sears progress along these lines has been rapid. However, our goal, to have every item sold at retail by Sears carry an informative label, is still some distance away. Many problems have to be met and solved, such as expense, method of application, color scheme and design, etc. Each individual item and line must be given individual attention. Nevertheless, we have applied informative copy in one way or another to many items and lines never before labeled by anyone in the industry.

New Developments in Labeling

LABELING of merchandise for home use continues to expand into new fields, while at the same time it meets obstacles in others, according to reports in the trade press during the past few weeks.

On the side of expansion can be placed the certification programs of the American Lighting Equipment Manufacturers Association and Pacific Mills (see pages 116 and 117); the recent announcement that 17 canners have now signed up and 200 more have applied for the Government's continuous inspection service for grade labeling of canned goods; and the report on *Informative*

Labeling of the National Consumer-Retailer Council (NCRC), just issued.

In addition to approximately 200 labels for canned foods approved by the NCRC, its approval service now extends to the textile field. Labels for Chatham blankets in all price ranges have now been approved by the Council, as well as labels for three Sears-Roebuck sheets, and 14 Sears towels, as shown in our article about the Sears-Roebuck program, on page 110.

Labels approved by the NCRC must be used on a product in at least two price levels so that the customer will be able to judge the quality from

the information given on the label. To be approved, the labels must give the following information:

- What it will do (performance)
- What it is made of (composition)
- How it is made (construction)
- How to care for it
- Recommended uses
- Name of manufacturer or distributor

Approved labels also carry a statement to the effect that this is the type of information recommended by the National Consumer-Retailer Council, Inc. The Chatham blanket label, for instance, gives for comparison the Chatham minimum standards for size, weight, durability, warmth, color fastness, and shrinkage, as well as specifications for the blanket labeled.

Standards are the first step in the labeling program, the NCRC report points out, listing six types of standards:

1. Standard definitions. Example: the answer to the question "What is wool?"
2. Standard methods of test. Example: tests for determining the shrinkage of woven cotton textiles or breaking strength of woven fabrics.
3. Standard construction specifications. Example: standards which define construction of certain types of sheets in terms of yarns per inch.
4. Standards for performance. Example: the performance for an electrical refrigerator of a certain size may be described as maintaining an average internal temperature of not over 45 degrees when the external temperature is 85 degrees, with $\frac{1}{4}$ horsepower motor running not more than 50 per cent of the time, with an average power consumption of not more than 2 kilowatt-hours per day.
5. Recommended standard practices for reconditioning a product. Example: a method for washing silk garments.
6. Standards of size. Example: sizes of women's full fashioned hosiery.

Promotion of standards, which includes educational work to develop an understanding of the value and use of standards for consumer goods, is one of the phases of the NCRC program.

Canned Foods Labeling Hits Trouble

Despite the wider acceptance noted above, grade labeling of canned foods (INDUSTRIAL STANDARDIZATION, February, 1941, page 48) seems in some directions to be heading into stormy weather, according to trade press reports. "About 16 big distributors of food" threatened to boycott food brokers who handle canned goods packed and grade labeled under continuous Government inspection. Assistant Attorney General Thurman Arnold told the House Appropriations Subcommittee in recent testimony concerning the annual appropriations bill for the Department of Justice.

The Department of Justice has 35 men working on 150 cases in the food field, 16 of which are "about ready for presentation," Mr. Arnold told the committee. In his testimony he said:

"The Department of Agriculture induced six cannery companies to voluntarily grade their products and mark them. An inspection was made by the Department of Agriculture so they could certify the grade of the product. Now the big distributors, about 16 of them, did not like this because it meant an interference with their method of advertising their products because they load up with any old grades. Outside of the chain stores, this buying is done through brokers. The bulk of it passes through brokers' hands so these large distributors said to the brokers, 'If you act as a broker for anybody who sells government grades we will not buy from you.' They said they would not buy from any broker who acted as a broker for anybody who used govern-

How standard specifications and methods of test for consumer goods, so closely related to the problem of labeling, are going forward under the procedure of the American Standards Association is shown in the chart facing page 5. Technical committees supervised by the ASA Advisory Committee on Ultimate Consumer Goods are now working on standards for refrigerators, sheets, children's garment sizes, bedding, fastness of colored textiles, and definitions of terms used in retailing. Studies are being made by exploratory subcommittees to determine whether or not standards can be developed for hosiery, shoes, silverplated tableware, and uniform test methods.

In addition to this work which has been assigned by the ASA directly to the committee on ultimate consumer goods, other ASA standardization projects, particularly in the electrical field, are of direct interest to the ultimate consumer. These include projects on radio, electric flatirons, electric ranges, and electric water heaters, and projects on hearing aids, photography, and gas-burning appliances.

Standards are the first step in a labeling program, the National Consumer-Retailer Council points out in its report on Labeling, just published.

ment grades. Of course, that will practically force them out of existence."

Another important grade labeling development as reported by *Food Field Reporter*, April 14, occurred when the Food and Drug Administration ordered its first seizures of canned goods labeled "Fancy" on the ground that the product did not measure up to the Agricultural Marketing Service Grade A. The FDA also ordered the seizure of products labeled Grade A which were alleged to be below the AMS standards.

These seizures will give grade labeling its first legal test, according to *Food Field Reporter*. "If the courts uphold the legal objectivity of AMS standards, grade-labeling proponents will receive the greatest boost, but if not, standards for grade labeling will suffer a set-back."

Paul Williams, AMS senior marketing specialist in charge of the food standardization project,

is by *Food Field Reporter* quoted as saying: "If grade labeling is to succeed we must make a stand that products conform to grades indicated. Any canner or distributor who labels his products untruthfully should be subject to regulatory action."

Food Field Reporter concludes its report on labeling of canned foods, thus:

"This paper also learned that large wholesalers are putting pressure on canners operating under AMS continuous inspection to refrain from embossing or imprinting the Department of Agriculture shield in their cans as this identifies the products as packed under continuous Government inspection. Consumer groups are being educated to look on cans for the Departmental seal as evidence of good quality. Wholesalers have suggested elimination of shields and use of plain cans."

Lighting Equipment Certified

SUCCESS of the Illuminating Engineering Society's certification program for IES lamps has resulted in a new certification program in the lighting field, this time by the American Lighting Equipment Association. The new ALEA program marks the first effort of this industry to merchandise lighting equipment in accordance with established minimum standards. Under the program ALEA manufacturer-members are required to submit samples of fixtures to the Electrical Testing Laboratories for testing and inspection, and certification tags will be attached to those fixtures conforming to the ALEA illumination specifications and design require-

ments. Residential fixtures, particularly those for use in living rooms, dining rooms, and bedrooms will be included in the program. The first group of fixtures is now being tested by the Electrical Testing Laboratories under the program, it is announced.

The ALEA certification program is similar in general outline to the Illuminating Engineering Society's certification program for IES lamps. In announcing the new program members of the lighting equipment industry pointed to the "stimulating effect of the IES program as evidence of the soundness of offering consumers certification based on minimum standards."



This certificate will be attached to lighting equipment tested by the Electrical Testing Laboratories when it meets requirements of the American Lighting Equipment Association's minimum standards.

Pacific Mills Certifies Color Fastness

SEVERAL standard tests are used as a basis for the information given on the FACTAGS attached to the fabrics it manufactures, Pacific Mills explains in a little booklet issued recently for the information of salespeople who handle its products. The FACTAGS certify the fabric for color fastness according to the requirements of Commercial Standard CS 59-41 issued by the National Bureau of Standards, and for shrinkage according to the requirements of Commercial Standard CS 59-39. Attached to cottons, the tag gives information on the color fastness to washing, color fastness to light, fibre content (if blended the percentage of each fibre), washing and handling instructions, and the special characteristics of the fabric. Attached to worsteds, the tags give information on color fastness to light, color fastness to dry cleaning, and color fastness to perspiration.

The FACTAGS rate the fabrics for different degrees of color fastness (superior, satisfactory, fair, or requiring special handling instructions)

based on their reaction to the Commercial Standard tests. If a fabric meets the requirements of test 4 for fastness to washing, for instance, it is classified as superior. This means that it has satisfactorily passed a test in the standard laundrometer, in which it was washed for 45 minutes in a solution of 0.5 per cent soap, 0.2 per cent alkali, and 0.01 per cent available chlorine at a temperature of 180 F. For a rating of satisfactory, a fabric must meet Test 3 in which it is washed for the same length of time but in a solution of 0.5 per cent soap, 0.2 per cent alkali, and no chlorine, at a temperature of 160 F. If the fabric only meets the requirements of Test 2, in which it is washed for 30 minutes with 0.5 per cent soap at 120 F, it is marked Fair. It requires special handling instructions, however, if it only meets the requirements of Test 1 (30 minutes, 0.5 per cent soap, at 105 F).

The Pacific Mills booklet also describes the standard tests for fastness to light, fastness to perspiration, and fastness to crocking.

Arizona Applies National Codes In State Safety Requirements

The Industrial Commission of Arizona has included parts of a number of American Standard safety codes in its revised General Construction Safety Code, a recent letter from the Commission states. Parts of the following standards have been made mandatory:

- Manual of Accident Prevention in Construction (A10.1-1939)
- Safety Code for Floor and Wall Openings, Railings and Toe Boards (A12-1932)
- Safety Code for Elevators, Dumbwaiters and Escalators (A17.1-1937)
- Recommended Practice for Inspection of Elevators (A17.2-1937)
- Safety Code for Construction, Care and Use of Ladders (A14-1935)
- Safety Code for Woodworking Plants (O1-1930)
- Protection of Heads, Eyes, and Respiratory Organs (Z2-1938)

In addition to these mandatory requirements, the Commission has adopted the following in a separate resolution:

- Safety Code for the Use, Care and Protection of Abrasive Wheels (B7-1935)
- Safety Code for Mechanical Power Transmission Apparatus (B15-1937)

The Commission is using the proposed Ameri-

can Recommended Practice for Compiling Industrial Injury Causes (Z16.2) to bring its record of accidents for 1940 up to date. "It does give us more detail and a definite listing for each classification which we had been working out for ourselves," H. E. Hodgson, chief safety engineer of the Commission states.

Gas Appliance Manufacturers Become ASA Member-Body

The Association of Gas Appliance and Equipment Manufacturers last month became a Member-Body of the American Standards Association, thus becoming entitled to a voice in all actions of the ASA on approval of standards or initiation of new standardization projects. Frank H. Adams, vice-president, Surface Combustion Corporation, Toledo, Ohio, was named by the Association to serve as its representative on the ASA Standards Council which has the final vote on all such actions. C. W. Berghorn, managing director of the Association, will serve as Mr. Adams' alternate.

Officers of the Association of Gas Appliance and Equipment Manufacturers are W. E. Derwent, president; W. F. Rockwell, vice-president; Lyle C. Harvey, vice-president; and John A. Fry, treasurer.

Federal Specifications Approved and Available

The following Federal Specifications have recently been approved for government purchasing. The dates after the titles represent the dates on which the specifications become effective.

Aluminumware; bake-shop and kitchen. (Amendment 2) RR-A-466 Apr. 15, 1941
Bedpans; corrosion-resisting-steel. (New) RR-B-191. Effective date is May 1, 1941, rather than date shown on specification
Brushes; cuspidor. (Amendment 1) H-B-171 May 1, 1941
Brushes; mucilage and paste. (Amendment 2) H-B-401 Apr. 1, 1941
Cable and wire; rubber-insulated, building-type, heat-resistant-grade—0 to 5,000-volt service. (Amendment 1) J-C-106a Apr. 15, 1941
Cots; folding, hospital, steel. (New) AA-C-581a Mar. 15, 1941
Enamel; pigmented (air-drying and baking), black. (Amendment 2) TT-E-521 Apr. 15, 1941
Fiber-board; hard-pressed, structural. (Amendment 1) LLL-F-311 Mar. 15, 1941
Gaskets; asbestos, metallic-cloth. (Amendment 2) HH-G-76 Apr. 1, 1941
Gaskets, rubber; molded, sheet, and strip. (Amendment 1) HH-G-156 Apr. 15, 1941
Gold; casting, inlay, dental. (New) QQ-G-540 Apr. 15, 1941
Hose; gasoline, wire-stiffened. (New) ZZ-H-471 Apr. 15, 1941
Hose; metallic, flexible, interlocking. (New) RR-H-651 Apr. 15, 1941
Ink; red. (Amendment 1) TT-I-549 Apr. 15, 1941
Lamps; electric, incandescent, miniature, tungsten-filament. (Amendment 1 to 1941 supplement) W-L-111b Dec. 18, 1940
Machines, vegetable-peeling; electrically-operated. (Amendment 1) OO-M-106 Apr. 15, 1941
Modeling-compound; dental. (New) U-M-506 May 1, 1941
Mowers; lawn, power. (Amendment 1) OO-M-681 May 1, 1941
Needles, hypodermic; for Luer syringes. (New) GG-N-196 Apr. 15, 1941

Nickel-copper-alloy; forgings, plates, rods, shapes, sheets, strips, and wire. (Superseding QQ-C-541) QQ-N-281 Mar. 1, 1941
Nickel-copper-aluminum alloy; forgings, rods, strips, and wire. (New) QQ-N-286 Mar. 1, 1941
Packing; asbestos, metallic-cloth, sheet. (Amendment 2) HH-P-31 Apr. 15, 1941
Packing; asbestos, sheet, compressed. (Amendment 3) HH-P-46 Apr. 15, 1941
Packing; diaphragm. (Superseding HH-P-61a) HH-P-61b Apr. 1, 1941
Packing; hydraulic. (Amendment 1) HH-P-112 Apr. 15, 1941
Packing; spiral, gland, low pressure. (Amendment 2) HH-P-171 Apr. 15, 1941
Paper; bond, white, and colored. (Amendment 1) UU-P-121c Mar. 1, 1941
Paper, impervious; paraffined—for surgical dressings. (New) UU-P-252 Apr. 1, 1941
Pipe; steel and ferrous-alloy, wrought, iron-pipe-size. (Amendment 1) WW-P-403a Apr. 15, 1941 (Applicable to Navy Dept. purchases only)
Pipe; wrought-iron, welded, black and zinc-coated. (Amendment 1) WW-P-441a Apr. 15, 1941 (Applicable to Navy Dept. purchases only)
Pipettes; Ostwald. (New) DD-P-386 Apr. 1, 1941
Pitchers, water; corrosion-resisting-steel. (Amendment 1) RR-P-386 Apr. 15, 1941
Rubber; denture. (Amendment 1) ZZ-R-696 May 1, 1941
Slides; glass, (for microscopy). (New) GG-S-446 May 1, 1941
T-Squares. (Superseding GG-T-711) GG-T-711a Mar. 15, 1941
Tubing; flexible, nonmetallic. (Superseding F.S. No. 57—HH-T-791) HH-T-791a Apr. 15, 1941
Valves; rubber. (Superseding ZZ-V-51) ZZ-V-51a Apr. 15, 1941

The above specifications may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at five cents each.

School Lighting Exhibit Features American Standard

School administrators were treated to an unusual example of promotion to increase the use of an approved American Standard at the convention of the American Association of School Administrators held recently at Atlantic City, N.J. One of the exhibits at the convention, staged by the Illuminating Engineering Society, used the theme "Light Sources for the School." As a feature of the exhibit, each school administrator was invited to sign a card which entitled

him to have a copy of the American Recommended Practice of School Lighting (A23-1938) mailed to his home address free of charge.

Index to German Standards On Sale at ASA Library

The national standardizing body of Germany has published an up-to-date list of its standards, and the book may be purchased from the American Standards Association library for \$2.50 per copy. Its title is DIN Normblatt-Verzeichnis, Herbst, 1940.



Courtesy Paramount Pictures, Inc.

Motion Pictures— Up-to-Date Equipment Standards Underwrite Artistic Values

FORMAL standardization in the motion picture industry began in 1916, with the organization of the Society of Motion Picture Engineers. Prior to that time the construction of motion picture equipment, and the film to be run in it, were subject to the individual preferences of the designers of the equipment. The development of the silent motion picture had covered a period of about 25 years from the time of the first public showing of any consequence and it was around 1916 that the commercial importance of the motion picture began to be felt.

One of the principal purposes of the formation of the Society of Motion Picture Engineers was the establishment of dimensional standards, in order to circumvent the growing confusion due to the variation in equipment and film dimensions. In fact, the intent of the organization with regard to standardization was very definitely expressed in the first section of the Constitution as drawn

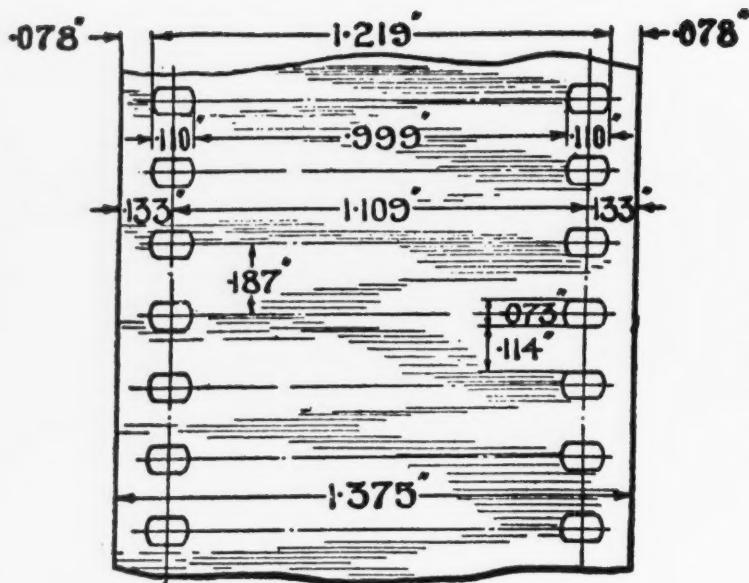
New publication contains all motion picture standards approved by the American Standards Association, as result of work of ASA sectional committee on motion pictures.

by Sylvan Harris¹

up at the first meeting of the Society in 1916:

"The advancement in the theory and practice of motion picture engineering and the allied arts and sciences, the standardization of the mechanisms and practices employed therein, and the maintenance of a high professional standing among the members."

¹ Editor Manager, Society of Motion Picture Engineers; Secretary, ASA Sectional Committee on Standards for Motion Pictures.



This shows the first standard of film dimensions adopted by the Society of Motion Picture Engineers in 1916. The essential dimensions shown in the drawing are still in force today and are included in the recent revision of the motion picture standards.

At the second meeting of the Society held at New York in October 1916, dimensional specifications for motion picture film and perforations were presented and approved, and it is interesting to note that the dimensions so proposed and adopted are those that remain to the present day as not only the standard of the SMPE but also the standard for the entire world. Among other standards adopted at that time were those relating to film speed, frame line, projection angle, projection lens foci, projection lens mounting, projection lens height, picture aperture, film perforation, standard picture film, lantern slide mat opening, thumb mark, and lantern strip. These projects were approved at the fourth meeting of the Society held at Chicago in July 1917 with the following foreword:

"The following have been adopted as standards by the Society of Motion Picture Engineers and are promulgated to encourage uniformity and standard practice throughout the industry as a whole. Their early universal adoption will save the industry a great deal of present annoyance and monetary loss."

It will be noted that this paragraph states specifically the very purpose of standardization. It is of special interest that those early pioneers of the motion picture industry, engaged in the work of standardization, recognized the importance of standardization at such an early stage in the growth of the industry. The industry at that time was virtually an infant industry, especially as compared to its magnitude at the present time. Those pioneers could not, of course, have foreseen to what enormous magnitude their industry would have attained by 1941, but nevertheless it was to their immediate advantage at the time that

they take whatever steps they could to promote uniformity of both equipment and practice.

It is needless here to discuss further the advantages of standardization. To do so would be "carrying coals to Newcastle." It is sufficient to say that the American motion picture industry has continuously, from the day of its inception, been very busily engaged in promoting standardization, and to encourage all practical steps in that direction.

Periodical revisions of the early standards have been made; many new standards have been added; and even some of the old ones discarded. Almost every three or four years new publications of the standards have been made available to the industry, and although it is, of course, impossible to estimate the magnitude of the advantage of these standards to the industry, nevertheless, the very fact that the industry has adopted them and put them into practice is evidence of their inherent importance to the industry.

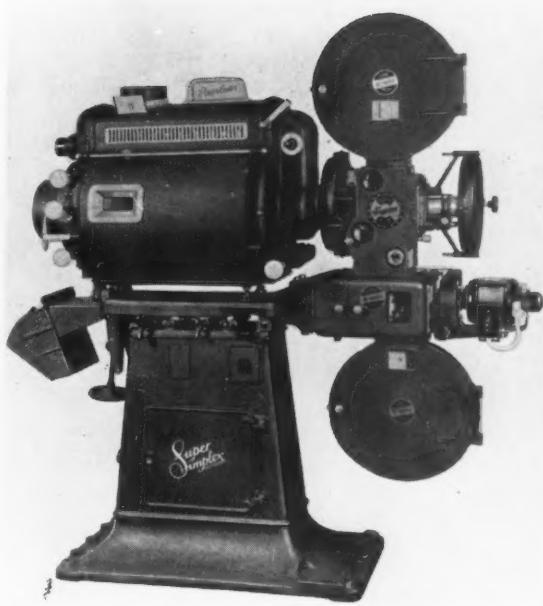
The scope of motion picture standardization embraces not only commercial 35-mm film and equipment, but 16-mm film and equipment as well. It may be of interest here to point out that despite the work that the Society of Motion Picture Engineers was doing in motion picture standardization in America, European standardization lagged considerably behind. For a long time films of various widths, and equipment designed for use in such films, were available throughout Europe in considerable varieties. Of late years, motion picture standardization in Europe has advanced considerably in the 35-mm field, but it is interesting to note the curious reversion to unstandardized practices that occurred

in Europe up to about 1935 in the so-called sub-standard field.

At that time quite a controversy arose between European and American interests in what might be called, broadly, "16-mm sound film standardization" and a number of conferences were held in Europe under the auspices of the International Standards Association, with representatives present from the American Standards Association and the Society of Motion Picture Engineers. Fortunately, the result of the conferences was a happy one. The 16-mm sound-film standardization, promulgated by the SMPE in America,² was adopted as an international standardization. This accord settled a great many questions in the minds of American manufacturers of "sub-standard film and equipment" and enabled the American industry to proceed with accelerated growth during the few years intervening up to the beginning of the present difficulties in Europe. The present war, with the consequent curtailment of development work, production, and use of sub-standard equipment, in no way lessens the advantage of the international standardization in this field. There is at least close co-ordination now between the British Empire and the United States. It is uncertain whether the activities in this field in other countries at present are on a major scale. Further, the international agreement helped to crystallize opinions and feelings among a number of American manufacturers who were "on the fence," and furthermore, will pave the way for greater uniformity of equipment and practice when the war will have ended.

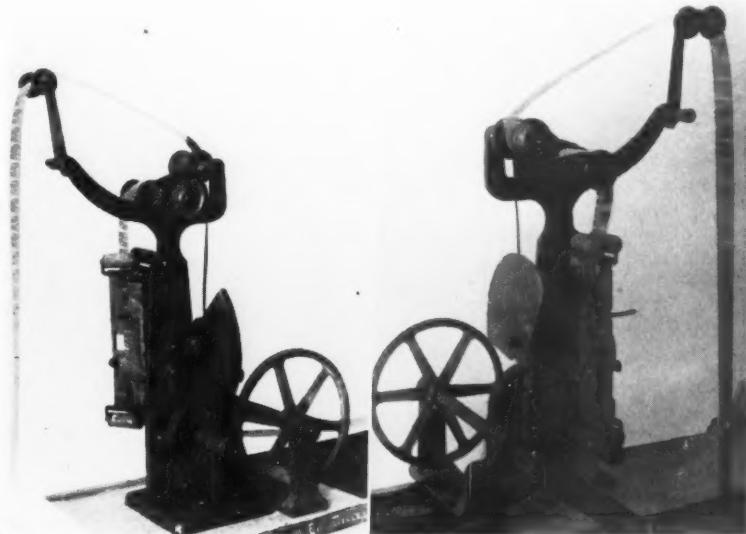
For many years motion picture standardization

² Approved by the American Standards Association.



This modern projector shows the contrast between projectors today and those used in the early days of motion pictures (below).

in America has been promoted through the American Standards Association. Up to about the middle of the 1920's the Society of Motion Picture Engineers was virtually the only organized body in America interested in the subject of motion picture standardization, or at least doing anything actively about it. About that time the



Here are views of one of the earliest motion picture projectors — about 1895.

Photos courtesy Society of Motion Picture Engineers.

Academy of Motion Picture Arts and Sciences was formed, with a branch devoted to the technical problems of the motion picture producing companies. Collaboration between the two groups grew continually, and formal standardization in America was further enhanced by the formation in 1934 of the Sectional Committee on Motion Pictures (Z22), with the Society of Motion Picture Engineers as sponsor, Dr. Alfred N. Goldsmith as chairman, and the author as secretary. Many projects have passed through the sectional committee since that time. The entire group of motion picture standards existing up to the beginning of the present year (1941) have

Members of the ASA Sectional Committee on Motion Pictures (Z22) working under the sponsorship of the Society of Motion Picture Engineers are:

*Alfred N. Goldsmith, Chairman
Sylvan Harris, Secretary*

Academy of Motion Picture Arts and Sciences, *J. O. Aalberg, A. F. Edouart, G. S. Mitchell*
Acoustical Society of America, *F. L. Hunt*
Agfa Ansco Corporation, *P. Arnold*
Akeley Camera Company, *J. L. Spence*
Amateur Cinema League, Inc., *F. G. Beach*
American National Committee for International Congresses of Photography, *W. Clark*
American Society of Cinematographers, *G. A. Mitchell, J. Ruttenberg (alt)*
Bell & Howell Company, *J. A. Dubray*
Dupont Film Manufacturing Corporation, *N. F. Oakley*
Eastman Kodak Company, *L. A. Jones, O. Sandvik (alt)*
Electrical Research Products, Inc., *C. Flannagan*
Fire Protection Group of the ASA, *A. R. Small, G. W. Booth (alt)*
Illuminating Engineering Society, *R. E. Farnham*
International Projector Corporation, *H. Griffin*
Mitchell Camera Company, *G. H. Worrall*
Motion Picture Producers and Distributors of America, *D. Palfreyman, A. S. Dickinson, F. L. Herron*
National Bureau of Standards, *E. W. Ely*
National Carbon Company, *D. B. Joy, E. A. Williford (alt)*
National Electrical Manufacturers Assn, *J. G. T. Gilmour*
Optical Society of America, *B. H. Carroll*
RCA Manufacturing Company, *M. C. Batsel*
Society of Motion Picture Engineers, *A. N. Goldsmith, E. K. Carver, H. G. Tasker*
Theater Equipment Supply Manufacturers Assn, *O. F. Neu*

been revised and brought up to date, and their most recent publication appears in the March 1941 *Journal of the Society of Motion Picture Engineers*. Reprints of these standards, in one volume, comprising all the standards of the motion picture industry adopted by the American Standards Association, are available either through the ASA office or the SMPE office at 50 cents per copy. They include the following American Standards and American Recommended Practices:

American Standards

- 35-Mm Sound Film: Emulsion and Sound Record Position in Camera—Negative. (Z22.2-1941)
- 35-Mm Sound Film: Emulsion and Sound Record Positions in Projector—Positive. For Direct Front Projection. (Z22.3-1941)
- 35-Mm Film: Projection Reels. (Z22.4-1941)
- 16-Mm Silent Film: Cutting and Perforating Negative and Positive Raw Stock. (Z22.5-1941)
- 16-Mm Film: Projector Sprockets. (Z22.6-1941)
- 16-Mm Silent Film: Camera Aperture. (Z22.7-1941)
- 16-Mm Silent Film: Projector Aperture. (Z22.8-1941)
- 16-Mm Silent Film: Emulsion Position in Camera—Negative. (Z22.9-1941)
- 16-Mm Silent Film: Emulsion Position in Projector—Positive. For Direct Front Projection. (Z22.10-1941)
- 16-Mm Film: Projection Reels. (Z22.11-1941)
- 16-Mm Sound Film: Cutting and Perforating Negative and Positive Raw Stock. (Z22.12-1941)
- 16-Mm Sound Film: Camera Aperture. (Z22.13-1941)
- 16-Mm Sound Film: Projector Aperture. (Z22.14-1941)
- 16-Mm Sound Film: Emulsion and Sound Record Positions in Camera—Negative. (Z22.15-1941)
- 16-Mm Sound Film: Emulsion and Sound Record Positions in Projector—Positive. (Z22.16-1941)
- 8-Mm Film: Cutting and Perforating Negative and Positive Raw Stock. (Z22.17-1941)
- 8-Mm Film: 8-Tooth Projector Sprockets. (Z22.18-1941)
- 8-Mm Silent Film: Camera Aperture. (Z22.19-1941)
- 8-Mm Silent Film: Projector Aperture. (Z22.20-1941)
- 8-Mm Silent Film: Emulsion Position in Camera—Negative. (Z22.21-1941)
- 8-Mm Silent Film: Emulsion Position in Projector—Positive. For Direct Front Projection. (Z22.22-1941)
- 8-Mm Silent Film: Projection Reels. (Z22.23-1941)
- 35-Mm Film: Cutting and Perforating Negative and Positive Raw Stock. (Z22.34-1930)
- 35-Mm Film: 16-Tooth Projector Sprockets. (Z22.35-1930)

American Recommended Practices

- 16-Mm Silent Film: Film Splices—Negative and Positive. (Z22.24-1941)
- 16-Mm Sound Film: Film Splices—Negative and Positive. (Z22.25-1941)
- Sensitometry. (Z22.26-1941)
- Photographic Density. (Z22.27-1941)
- Projection Rooms. (Z22.28-1941)
- Projection Screens. (Z22.29-1941)
- Nomenclature. (Z22.30-1941)
- Safety Film. (Z22.31-1941)
- Fader Setting Instructions. (Z22.32-1941)
- Nomenclature for Filters. (Z22.33-1941)

Other projects are now engaging the attention of the various member groups of the sectional committee and also of the sectional committee as a whole. The Society of Motion Picture Engineers and the Research Council of the Academy of Motion Picture Arts and Sciences have each issued a number of Recommended Practices which have not yet been referred to the sectional committee, but will in due course be considered by that body.

Revised Standard Gives Dimensions For Wrench-Head Bolts and Nuts

The revised American Standard for Wrench-Head Bolts and Nuts and Wrench Openings (B18.2-1941), approved by the American Standards Association in January, 1941, is now available. Regular and heavy bolt heads, cap, and set screw heads, regular, heavy, and light nuts, and wrench openings are included in the standard. An Appendix gives a table of recommended thread lengths for bolts and formulas for bolt, cap screw, and set screw heads, and for nuts.

The revision incorporates changes proposed in a questionnaire distributed to members of the subcommittee and others concerned.

The revision was prepared by Subcommittee 2 on Wrench Head Bolts and Nuts of the ASA Sectional Committee on Bolt, Nut and Rivet Proportions, under the sponsorship of the American Society of Mechanical Engineers and the Society of Automotive Engineers. W. K. Mendenhall, Jr., Lieutenant Commander, U.S. Navy, was chairman of the committee while this revision was being completed.

Copies of the standard are available at 65 cents each.

Reports Analyze Toxic Problems Of Carbon Monoxide and Benzene

The four new American Standards for toxic dusts and gases (carbon monoxide, hydrogen sulfide, carbon disulfide, and benzene) refer to public health reports on the toxicity and potential dangers of these substances which are being issued by the U.S. Public Health Service.

Two of these reports are now published. The first, on "Carbon Monoxide: Its Toxicity and Potential Dangers," is available in Public Health Reports, Number 10, March 7, 1941. The second, on "Benzene (Benzol): Its Toxicity and Potential Dangers," is in Public Health Reports, Number 11, March 14, 1941.

Both reports analyze the physical-chemical

"At this time, involved as we are in a national emergency, I believe that the best interests of all concerned will be served by close compliance with the new standard and insistence that it not only receive tacit approval, but actually be put to use and followed carefully by both manufacturers and users."—

—W. K. Mendenhall, Jr., Lieutenant Commander, U.S. Navy; past-chairman Subcommittee 2 on Wrench-Head Bolts and Nuts, Sectional Committee on the Standardization of Bolt, Nut and Rivet Proportions.

properties of the substance, give the maximal permissible concentration as approved by the American Standards Association, and analyze the sources of exposure, the determination of the substance in air, and the concentrations determined under different conditions. In addition, they give information about the effect of the substances on human beings, specifically how they are absorbed and eliminated, methods of determination of the substances in the blood, the relation between concentrations in air and toxic symptoms, and information about treatment.

Copies of the two documents are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. at five cents each.

ASA Approval Is Asked On New Reamer Standard

Types and designs of reamers, general dimensions, and magnitude and direction of tolerances, including the number of flutes in the various types, are covered in a proposed American Standard for Reamers, just submitted for the approval of the American Standards Association.

The proposed standard was submitted to the ASA by the American Society of Mechanical Engineers, the Society of Automotive Engineers, and the National Machine Tool Builders' Association. These three organizations are sponsors for the ASA project on Standardization of Small Tools and Machine Tool Elements under which the new standard for Reamers was developed.

During the development of the standard by the ASA committee, some 350 copies were distributed to industry for criticism and comment.

45 Years in Fire Prevention Earn Award for R. P. Miller

"Forty-five years of public service in the cause of fire prevention through intelligent engineering" were given recognition at the Twelfth Annual Safety Convention and Exposition of the Greater New York Safety Council April 22-25, when Rudolph P. Miller was presented with the original Cranach chromolithograph portraying the burning of Barnum's museum, July, 1865. Mr. Miller, veteran building code authority and one of the first inspectors for the Department of Buildings, New York City, is chairman of the ASA Building Code Correlating Committee. The presentation was made to Mr. Miller at the convention dinner as part of the ceremonies celebrating the 75th Anniversary of the founding of the National Board of Fire Underwriters.

Mr. Miller is recognized as the dean of authorities in building codes, particularly as they relate to fire prevention. His long career in this field started in 1895 when he became inspector for the New York City Department of Buildings. In 1910 he became Superintendent of Buildings for the New York City Department of Buildings, and in 1915 he was retained by the Board of Aldermen of New York City to revise the building laws. In 1916-1918 he was chairman of the New York City Board of Appeals, and from 1920-1921 was again Superintendent of Buildings.

Mr. Miller became a member of the National Fire Protection Association in 1905 and since that time has been prominent in the Association.



Mr. Miller (right) receives the Greater New York Safety Council's award from Frank L. Jones, president of the Council.

From 1913 to 1930 he was a member of the NFPA Executive Committee, serving as chairman of the committee from 1919 through 1922. He was vice-president of the Association from 1922 through 1924, and president from 1924 through 1926.

He is an active member of the NFPA Committees on Safety to Life and on City Planning and Zoning, and is chairman of the ASTM and ASA Committees on Specifications for Fire Tests of Building Construction and Materials. He was chairman of the Department of Commerce Building Code Committee at the time its work was taken over by the American Standards Association and reorganized into the ASA Building Code Correlating Committee and has been chairman of the BCCC since that time.

Australian Committees Report On Standards for Defense Work

The Committee on Copper Alloys of the Standards Association of Australia has listed particularly standards for those alloys which are in immediate demand for use in production and maintenance of Australian aircraft in its first report for the Department of Defense Coordination, the committee announces. The report was prepared as the result of a request by the Department that the Standards Association of Australia endeavor "to produce co-relation between local specifications and British Standard and DTD Specifications."

The Report on Copper and Copper Alloys is the third as a result of this work. The first was that relating to steels, on which a report approved by

the Special Committee on Steels for Aircraft (Report No. MP. 4-1940) together with a number of steel specifications in the Emergency Series was published in April, 1940.

A Report on Light Alloys (No. MP 5-1940) covering both aluminium and magnesium alloys, was also published, together with a group of light alloy specifications for use in the Australian aircraft industry.

The present Report on Copper and Copper Alloys (No. MP 6-1940) includes recommendations of the Committee on Copper Alloys for the use of those concerned with alloys in Australia. It lists the standards for copper and copper alloys applicable for use in aircraft manufacture under the following classifications: Castings; Bars, extruded sections and forgings; Sheet; and Tubes.

ASA Library Receives New Foreign Standards

The following is a list of new and revised standards which have been received recently by the American Standards Association, and which are available to members for loan from the ASA.

Canada

Welded Genuine Wrought-Iron Pipe (B62-1940)
Copper and Brass Pipes, Standard Sizes (B64-1940)
Copper Water Tubes (B66-1940)
Service-Entrance Cables (C22.2 No. 52-1941)
Welders' Helmets, Hand Shields and Goggles, and for General Purpose Anti-Glare Goggles (S69-1941)

Revised Canadian Standards

Armoured Cables and Armoured Cords (C22.2 No. 51-1941)

Great Britain

Vulcanized Fibre (Natural Colour) Rods and Tubes for Electrical Purposes (934-1940)
Oil Circuit Breakers for Alternating-Current Circuits up to and including 660 Volts (936-1940)
Flexible Cord for Miners' Cap Lamps (937-1940)
Metal Arc Welding as Applied to Tubular Steel Structural Members (938-1941)

Moore Is New Chairman Of Committee on Stresses

Lewis E. Moore, Consulting Engineer, Boston, Massachusetts, is new chairman of the Advisory Committee on Working Stresses, of the Building Code Correlating Committee, succeeding F. E. Schmitt. The BCCC voted the following resolution of appreciation for Mr. Schmitt's work:

Resolved. That the BCCC record its appreciation of Mr. Schmitt's able conduct of the activities of the Advisory Committee on Working Stresses. His keen interest, generous cooperation, and tactful handling of controversial questions has been most helpful to the Advisory Committee and to the BCCC.

The Advisory Committee has a membership of technical experts who are particularly familiar with the problem of building stresses. They act as a consulting committee to advise the Building Code Correlating Committee and the building code technical committees on safe stresses for the various materials used in building construction. The committee has already presented recommendations to the Building Code Correlating Committee on allowable stresses for structural steel and has endorsed stresses in the proposed standard on reinforced gypsum concrete recently submitted for approval as American Standard.

Great Britain (Continued)

Engineers' Squares (939-1941)
Electric Lamp Bulbs for Automobiles (6-Volt and 12-Volt Bulbs for Head, Side and Rear Lamps) (941-1941)

Revised British Standard

Electric Mains-Operated Radio and other Apparatus for Radio, Acoustic and Visual Reproduction (415-1941)

British Air Raid Precautions Standards

Headlamp Masks for Road Vehicles (BS/ARP 36)
Electrical Heating of Shelters (BS/ARP 54)
Detection of Incendiary Bomb Fires by Heat-Sensitive Devices (BS/ARP 53)

Revised British Air Raid Precautions Standards

Methods of Providing Low Values of Illumination (not exceeding 0.002 Foot-Candle) (BS/ARP 16)

New Zealand

Code of Clauses for Town-Planning Schemes (181)

When copies of the above standards are requested, the symbol number and the title should both be given.

Draft Standards Received from Great Britain and Australia

Drafts of proposed standards have been received recently from Great Britain and Australia. These may be borrowed by members of the American Standards Association from the ASA Library.

Australia

Adhesive Plaster and Zinc Oxide Plaster (To be No. 10-3-5 and No. 10-3-17) June 30
Table Crockery and Chinaware for Hospitals (To be No. 10-6-1) July 31
Flexible Steel Conduit for Cable Protection and Flexible Steel Conduit to Enclose Flexible Drives (To be No. C90) August 31
Lead and Lead Alloys for Cable Sheathing (To be No. C91) August 31

Great Britain

Pressure Paint Containers (CF ME 7571)
Engineers Comparators for External Measurement (CF ME 7708) June 2
War Emergency Specification for High Tensile (Fusion Welding Quality) Structural Steel for Bridges, etc. and General Building Construction (CF IS 7723)

The date after the title of the draft denotes the closing date for the receipt of comments. The American Standards Association will be glad to forward any comments to the national standardizing body concerned.



Canadian Engineering Standards Association heads testing and approval program for all electrical equipment sold in Canada

Approvals protect against fire hazard and danger of electrical shock

by W. P. Dobson¹

*Chairman, Administrative Board,
Approvals Division, Canadian
Engineering Standards Association*

How Canada's Electrical Equipment Is Tested and Approved

THE problem of minimizing the fire hazard due to electricity, and safeguarding persons against shock, as it faces electrical inspection authorities and standardizing bodies dealing with electrical safety, has three main subdivisions. The first of these is the preparation of rules and regulations for the installation of electrical equipment; the second is the testing and certification of equipment, including the preparation of safety standards governing this testing; and the third is the enforcement of the regulations.

The preparation of installation rules is usually accomplished by co-operative effort between electrical inspection authorities and other branches of the industry.

The testing is carried on by testing laboratories whose findings are accepted by inspection authorities and adhered to by manufacturers. It involves also co-operation between all sections of the industry in the preparation of test standards.

The third subdivision is the specific task of electrical inspection authorities.

The second subdivision, testing and certification of electrical equipment, as it is carried out in Canada, is the subject of this article. For convenience, the simpler term "approval testing" is chosen for use in this article.

The basis of approval testing in Canada is the Canadian Electrical Code, and it is necessary here to outline briefly the form of this Code and the method followed in preparing and revising it, in order to provide a foundation upon which to build a readily comprehensible description of the approval testing work.

The story of electrical safety regulations in Canada has many points of similarity with that of the United States.

Since the electrical development in this country was influenced from the first by American developments, it was natural that the National

¹Chief Testing Engineer, The Hydro-Electric Power Commission of Ontario.

Electrical Code² should be used as the basis for rules in Canada. In the early days of the industry this Code was used by the underwriters' organizations, who were the pioneers in electrical inspection, and after the organization of the first inspection departments, about thirty years ago, it continued to be the basis of Canadian regulations. As in the United States, however, it was subject to diverse interpretations by inspection authorities and was supplemented by local rules which differed materially from one another.

Diversity Unsatisfactory

This divergence of interpretation and practice resulted eventually in a situation unsatisfactory to the industry at large, particularly to the manufacturers who were required to supply various forms of the same type of equipment, depending upon local rules. The condition was in some cases caused, and in all cases aggravated, by the fact that inspection authorities began to give attention to the shock hazard which at that time was given little attention in the National Electrical Code.

In 1919, it was suggested that the inspection authorities unite with the other branches of the electrical industry in the preparation of a Code which could be accepted nationally. The Canadian Engineering Standards Association, which had just been organized, was asked to undertake the work. This it agreed to do. After a thorough study of the problem, it was decided that the Code should deal with the shock hazard as well as the fire hazard and the work was undertaken. It has continued without interruption and has been from the first one of the Association's most important activities.

The first edition of the Canadian Electrical Code appeared in 1927, and its publication produced remarkable results throughout the country. Within four years, legislation was passed in practically all the Provinces to adopt the Code and in some cases to establish Provincial Inspection Departments. At the present time, provincial inspection is in force in six Provinces which contain 85 per cent of the total population of the country, and municipal inspection covers most of the remaining population.

Controls Sale of Equipment

In practically all cases the legislation provides for control of the sale of electrical equipment. This important fact had a vital bearing on the decision made by the Canadian Engineering Standards Association to undertake approval testing.

² The most recent edition of the National Electrical Code was approved by the American Standards Association in 1940. The Code is under the sponsorship of the National Fire Protection Association.

The machinery for carrying on this work in Canada differs from that in the United States in that the installation rules (the counterpart of the National Electrical Code) and the specifications for construction and test of electrical equipment (which correspond to the specifications of Underwriters' Laboratories in the United States), are in Canada both prepared by the same organization, The Canadian Engineering Standards Association. In addition, the distribution of representation on the CESA committees is somewhat different.

The Committee on Part I (Installation Rules) contains 27 members made up as follows:

Chairman	1
Inspection Group—	
(a) Provincial Electrical Inspection Authorities or other Provincial representatives.....	9
(b) Municipal Inspection Authorities.....	2
(c) Fire Underwriters' Association.....	2
(d) Provincial Fire Marshals.....	1
Electrical Manufacturers—	
(Canadian Manufacturers Association).....	2
Electrical Utilities—	
(a) Publicly-owned	1
(b) Privately-owned (Canadian Electrical Assn)	1
Miscellaneous—	
(a) Railways	2
(b) Labor	1
(c) Communication Interests (Telephone Assn of Canada)	1
(d) Professional Societies	1
(e) Dominion Government	1
(f) Canadian Transit Association	1
(g) National Research Council	1
Total	27

The Committee on Part II (Specifications) is composed of eleven members with the following representation:

Chairman (from the Approvals Laboratory).....	1
Canadian Electrical Association	1
Canadian Underwriters' Association	1
Inspection Authorities	1
National Research Council	1
Approvals Laboratory	1
Electrical Manufacturers	5
Total	11

It will be evident on examining these lists that the inspection group constitutes the majority of Part I Committee and the manufacturers the majority of Part II Committee. The procedure of revision further requires that all specifications prepared by the Part II Committee shall be approved by the Committee on Part I, which then submits them to the Main CESA Committee for final approval and publication. Thus the fundamental principle which forms the basis of the code organization is that the final decision on all

Code matters shall rest with those whose sole concern is public safety.

Approval Testing

The first organization to undertake approval testing in Canada was Underwriters' Laboratories which furnished a service to Canadian manufacturers from its Laboratories in Chicago and New York, and through representatives resident in Canada. Its lists of approved material were made use of by Electrical Inspectors as well as by Insurance Underwriters' Associations.

In the province of Ontario, The Hydro-Electric Power Commission was responsible for electrical inspection, and about 1918 it established an Approval Laboratory and issued approvals in respect of equipment offered for sale in that Province.

The first edition of the Canadian Electrical Code contained a definition of "Approved" which recognized the Laboratories of The Hydro-Electric Power Commission, Underwriters' Laboratories, or a Canadian Government Laboratory. The result of this combined with the legislation passed following 1927 was that the Approval Laboratory of The Hydro-Electric Power Commission was used to an increasing degree by other provinces. It experienced a continuous expansion and when Underwriters' Laboratories in 1933 ceased to carry on electrical approval work in Canada, the approval of The Hydro-Electric Power Commission Laboratory received a wider acceptance.

The National Research Council of Canada had also about this time undertaken fire hazard testing and the approval of various types of equipment. Some of these contained electrical elements, and in order to avoid confusion The Council and The Commission made a co-operative arrangement with respect to electrical testing.

National Program Needed

As the volume of work increased and as approval testing became more important, it became apparent that approvals of a national character should not be issued by any Province, and the desire was expressed by Inspection Authorities that approval certificates in order to receive national acceptance should not bear the name of The Hydro-Electric Power Commission. In this view the Commission concurred.

A conference of Inspectors held in Toronto, in 1938, which was attended by representatives from practically all provinces unanimously resolved to request the Canadian Engineering Standards Association to assume the responsibility of approving electrical equipment for use in Canada. The Executive Committee of the Association ap-

pointed a subcommittee consisting of Major-General A. G. L. McNaughton, W. E. Ross, and W. P. Dobson to study the matter, and, after considering its report, unanimously agreed to accede to the request of the Provincial Inspectors.

It was decided to organize a division known as the "Approvals Division", which would be financed entirely from the fees received from applicants for approval and would receive no financial support whatever from the general funds of the Association. Since the Association could not equip a laboratory, it was decided to make use of those laboratories then carrying on the work in Canada, namely, the National Research Council, and The Hydro-Electric Power Commission of Ontario. These laboratories were accordingly appointed testing agents of the Association.

The whole arrangement was contingent upon receiving the consent of the provinces to accept the approvals of the Canadian Engineering Standards Association and to enforce Provincial regulations based on these approvals. This consent was obtained and on May 1, 1940 the Association assumed control. The Hydro-Electric Power Commission then transferred to the Approvals Division all funds in its possession on that date representing unearned income in respect of fees received, and contingency reserve.

Approvals Division Organized

The organization of the Approvals Division, which was charged by the Canadian Engineering Standards Association Executive Committee with the responsibility of administering its new activity, was based upon the following conditions:

1. Close co-operation with Provincial and Municipal Inspection Authorities in order that the Association's approvals would be universally accepted.
2. The closest possible co-operation between the Association and the Testing Laboratories appointed as agents, particularly that of The Hydro-Electric Power Commission of Ontario.

The first condition was satisfied by appointing an Approvals Council which consisted of the Chief Electrical Inspectors of the various Provinces, or in Provinces where Provincial Inspectors were not appointed of some representative recognized by the Provinces. In addition representatives of insurance underwriters were included on the Board. The present membership of this Council is as shown in the box on the next page.

The duties of the Council are to serve as a medium of communication between the Canadian Engineering Standards Association and the Inspection Authorities, to vote upon laboratory approval reports, and to act in an advisory capacity in matters of approval. It meets once a year or at the call of the chairman.

The second condition was met by appointing an Approvals Administrative Board to act for the Executive Committee in managing the Approvals Division. This Board conducts all the affairs of the Approvals Division and reports to and receives instructions from the Executive Committee. It consists of three members, as follows: W. P. Dobson (chairman) The Hydro-Electric Power Commission of Ontario, Colonel W. R. McCaffrey (secretary) Canadian Engineering Standards Association, and B. S. Ballard, National Research Council.

Its most important routine task is to keep in touch with the Approval Laboratory of The Hydro-Electric Power Commission, particularly to review its financial statements and to decide upon matters of policy and other questions referred to it by W. C. Cale, Approvals Engineer. Since this Laboratory carries on practically all of the testing, special financial arrangements have been made whereby the Commission bills the Association monthly for its costs. These include salaries, expenses, and items of overhead, such as rental of space and equipment, accounting and clerical services, etc. Also since the Head Office of the Canadian Engineering Standards Association is in Ottawa and the Laboratory is in Toronto, a branch office has been established in the Laboratory so that applications may be received there and submittors may avoid delay.

Approvals Procedure

The procedure adopted by the Approvals Division is essentially the same as that previously in force. Applications for approval are made to the Laboratories in Toronto and all routine correspondence in connection with tests are conducted by the Approvals Engineer.

When all the tests have been finished and the Laboratory is satisfied that the requirements of the Code have been met, a report is prepared recommending approval and sent to each member of the Approvals Council with a letter-ballot. The votes of the Council are forwarded to the Secretary of the Association and if two-thirds of the membership are in accord with the recommendations of the Laboratory, the Secretary issues, in the name of the Association, a notice of approval. The submittor is required to enter into an agreement with the Association providing for periodic follow-up inspection.

Issue Lists of Approved Equipment

Lists of approved equipment are published periodically by the Association. In addition to this, the Laboratory forwards weekly to each member of the Approvals Council a short report in which are listed all applications received, approval

Members of the CESA Approvals Council

W. P. Dobson (Chairman) Representing the CESA
B. G. Ballard, National Research Council
V. A. Ainsworth, Chief Electrical Inspector, representing Prince Edward Island
G. A. Vandervoort, Chief Engineer, N. B. Electric Power Commission
A. G. Hall, Ontario Provincial Electrical Inspection Dept.
A. G. Mahon, Nova Scotia Power Commission
J. N. Mochon, Chief Examiner, Board of Electrical Examiners, Province of Quebec
Geo. Newman, City Electrician, Winnipeg, representing Province of Manitoba
L. M. Howe, Representing Saskatchewan Power Commission, Saskatchewan
H. L. Taylor, Inspector of Electrical Energy, Vancouver, B. C.
R. D. Wagner, Workmen's Compensation Board, representing Province of Alberta
Col. W. R. McCaffrey, CESA Secretary, Canadian Engineering Standards Assn
F. A. Cambridge, Dominion Board of Insurance Underwriters
W. J. Allen, Dominion Board of Insurance Underwriters.

recommendations, and the names of manufacturers whose approval has been cancelled. In this way the Provincial Inspection Authorities are kept in continuous touch with the Approvals Division.

A follow-up inspection service, of which there are two forms, the "Label Service" and the "Re-examination Service," is provided in order to maintain a continuous check upon the quality of the approved equipment. This is done so that the CESA may be assured that the standard requirements are at all times being complied with.

The "Label Service," which includes periodic examination of the equipment, applies to certain types of equipment which are produced in sufficient volume to justify issuing labels in quantity, almost in the way postage stamps are issued, to the manufacturer which he may apply to the equipment to indicate compliance with standards.

The "Re-examination Service" applies to equipment which cannot be readily labeled and which is not produced in sufficient quantity to justify the Label Service. Canning machinery, for instance, for which there is a \$15 annual inspection fee, or wire connectors, for which the annual fee is \$10, are examples of such equipment.

For the Re-examination Service, as indicated in these examples, there is a fixed fee. For the Label Service, the annual charge depends upon the number of labels used, although this service is subject to a minimum annual fee. Electrical

fixtures, for instance, are \$10 per thousand. A manufacturer of fixtures, therefore, who buys 100,000 labels pays \$1,000, but if on the other hand he buys less than 1,000 labels he must pay the minimum annual fee of \$10.

Each Approval Label bears the inscription "CESA Standard—Approved, Canadian Engineering Standards Association." The mark of approval under the Re-examination Service is "CESA Approval No. —" or "CESA App. No. —."

Approvals of Other Laboratories

The essential condition which formed the basis of the request made to the Canadian Engineering Standards Association at the Inspectors' Conference was that all approvals in Canada be issued in the name of the Association. Consequently the definition of "Approved" which appears in the last edition of the Canadian Electrical Code reads as follows:

"APPROVED: When used with reference to any particular electrical equipment means that such equipment has been submitted for examination and test to the CESA, and that formal approval has been given to the effect that it conforms to the CESA Standards as established under the provisions of the Canadian Electrical Code.

"NOTE: The CESA proposes to authorize Laboratories to examine and test electrical equipment, and these Laboratories will issue reports to the CESA, and approvals based thereon will be issued by the CESA. The CESA further proposes to institute a follow-up service (re-examination or label service)."

Under this arrangement, the Administrative Board is authorized to consider reports from any laboratory and to decide, on the basis of these reports, whether the requirements of the Canadian Engineering Standards Association have been met. If so, the submitter may receive approval provided that he enters into an agreement specified by the procedure of the Association. Following out this principle, the Board made arrangements with Underwriters' Laboratories for the testing of equipment for use in hazardous locations in which a special technique is followed for which equipment exists only in the laboratories at Chicago.

Committee on Part II

The foundation of the approval testing is the body of test specifications contained in Part II of the Canadian Electrical Code. It is natural, therefore, that the contact between the Committee on Part II of the Code and the Approvals Division should be very close. The Approvals Engineer of the Hydro-Electric Power Commission is chairman of this committee, which meets regularly three times a year. It is composed of eleven members but it enlists the assistance of many

more in various Subcommittees and Panels formed to prepare individual specifications. These Subcommittees are composed of manufacturers' representatives and representatives from the Approvals Laboratory, the National Research Council, and the Underwriters' Associations. This work of preparing specifications is a continuous operation. During 1940 new specifications were prepared. It is expected that during 1941 the total number will be increased by ten.

Summary

Although the new order has been in existence for less than a year, the results have been so encouraging as to warrant the statement that the arrangement approaches the ideal. It has received universally favorable reactions from the

Specifications Approved in 1940 Under Canadian Electrical Code

During 1940, four new specifications for construction and test of electrical equipment and three revisions were completed by the Canadian Engineering Standards Association, bringing the total number of specifications to 55. These 1940 specifications indicate the general nature of the equipment included under the approvals testing program. They cover construction and test for:

Power-operated Radio Devices (No. 1A-1940. Second Edition)
Electric Signs (No. 2-1940. Second Edition)
Insulated Conductors for Power-Operated Radio Devices (No. 16-1940)
Extra Low Potential Control Circuit Wires and Cables (No. 35-1940. Second Edition)
Air-Cooled Transformers (Dry Type) (No. 47-1940)
Pull-Off Plugs for Electro-Thermal Appliances (No. 57-1940)
Porcelain Cleats, Knobs, and Tubes (No. 69-1940)

One new specification and one revision have already been completed and published during 1941, covering:

Armored Cables and Armored Cord (Second Edition) (No. 51-1941)
Service-Entrance Cables (No. 52-1941)

These specifications are all approved by the Canadian Engineering Standards Association under Part II of the Canadian Electrical Code.

electrical industry and from government authorities. The reasons for this success are, in my opinion, the following:

1. There is only one organization, the Canadian Engineering Standards Association, which prepares the rules and standards, and which issues approvals based on these standards.

2. This organization is in continuous touch with all those interested in Code matters and is in a position to organize Committees with the least possible delay.

3. The Approvals Council enables the Inspection Authorities to keep in close touch with the Approval Testing work and with the Approvals Division. It enables the Canadian Engineering Standards Association to secure the maximum co-operation from Inspection Departments. This is accomplished by periodic meetings which are financed by the Approvals Division. These meetings are considered of great importance and the impossibility of holding them regularly was formerly a serious impediment to universal acceptance of the CESA standards.

4. The Administrative Board is able to meet frequently and to keep in close touch with the principal Testing Laboratory and to deal promptly with important matters requiring decisions.

It was fortunate that the Approvals Laboratory of The Hydro-Electric Power Commission had been carrying on this work for many years previous to 1940, and that it was providing an Approval service to practically every electrical manufacturer in the country and to a large number of foreign manufacturers who were selling their product in Canada. This made it possible to effect the change with practically no inconvenience to the electrical manufacturers and imposed the minimum of effort on the Canadian Engineering Standards Association in organizing for the work.

Oil Burners Must Comply With Commercial Standard—

FHA Insuring Offices Decide

The first steps in a program to make the Commercial Standard for Oil Burners, CS75-39, effective in its Insuring Offices were completed on February 1, 1941, according to information received from the Federal Housing Administration. As of that date, the standard has become effective and will be used as the basis for approval of oil-burner installations in 12 offices, including Washington, D. C., Hartford, Conn., Philadelphia, Pa., Boston, Mass., Providence, R. I., Cincinnati, Ohio, Newark, N. J., Albany, N. Y., Baltimore, Md., Richmond, Va., New York City, and Jamaica, Long Island.

The commercial standard was promulgated by the National Bureau of Standards, effective for new production November 1, 1939, as a guide for

manufacturers, distributors, installing contractors, and users. It covers manufacturing and production tests, and laboratory requirements and test procedure, as well as installation requirements and performance tests. The Federal Housing Administration took an important part in the studies that were made in developing the standard.

The most important feature of the standard, according to the Federal Housing Administration, is the field test of the installation which requires a minimum combustion performance. The requirements of the field test deal with percentage of CO_2 , draft, stack temperature, smoke and firing rate. A certificate of compliance showing the test data must be furnished. Other requirements of the standard of interest to the home owner are long-hour duty motors, no unreasonable amount of radio interference from burners, freedom from mechanical sound, and burner control with special reference to smoke emission. The standard also requires that oil burners be tested at the Underwriters' Laboratory for performance as well as safety.

The requirement of compliance with the commercial standard has been effective in the New York and Jamaica Insuring Offices for nearly two years and hence a minimum of readjustment under the present program will be necessary in these districts.

Revision Coordinates Requirements In Copper Wire Standards

A change has been made in the American Standards for Hard-Drawn Copper Wire and for Medium Hard-Drawn Copper Wire to bring the requirements of these two standards in line with the American Standard Specifications for Soft or Annealed Copper Wire (H4.1-1940; ASTM B 3-39). The change provides that the wire shall not vary from the specified diameter by more than the following amounts:

<i>Diameter of Wire, Inches</i>	<i>Permissible Variations in Diameter, plus or minus</i>
Under 0.0100	0.001 in. (0.1 mil)
0.0100 or over	1 per cent

This revision in the two standards was adopted by the American Society for Testing Materials and submitted to the American Standards Association. Approval was given by the American Standards Association on March 11.

Copies of the two revised American Standards, Specifications for Hard-Drawn Copper Wire (H4.2-1941; ASTM B1-40) and Specifications for Medium Hard-Drawn Copper Wire (H4.3-1941; ASTM B2-40), are now available at 25 cents each.

Dr. M. G. Lloyd

The safety movement lost one of its pioneers and one of its most active workers with the death of Dr. Morton G. Lloyd on April 26, in his 67th year. Dr. Lloyd, who had been ill only a short time, died at his home in Chevy Chase, Md. He had been head of the Safety Codes Section of the National Bureau of Standards since 1917.

Dr. Lloyd took a prominent part in the ASA safety code work and in the history of the ASA itself from the very inception of the safety program. Under the leadership of the National Bureau of Standards, a conference was called in 1919 to organize a program of national safety standards for the prevention of industrial accidents. Out of this conference grew the ASA safety code work. This later contributed to the reorganization of the American Engineering Standards Committee into the American Standards Association. The need for bringing together representatives of industry and government as well as engineering groups in developing safety codes widened the membership of the AESC to include trade associations and stimulated the growth of the AESC from an engineering coordinating committee to a representative national standardization association.

Dr. Lloyd was active in this work from the beginning, in close association with the late Dr. E. B. Rosa. He was a member of the "Committee of Twelve" appointed December 8, 1919, which later became the Safety Code Correlating Committee. Dr. Lloyd himself drew up the by-laws under which the SCCC was organized and under which it has operated from 1922 until the present time. He was an active member of that committee until his final illness.

Dr. Lloyd was best known for his work on electrical safety. No man has done more in this field. For a quarter century he exerted a strong influence on the development of the National Electrical Code and the National Electrical Safety Code. For many years he was chairman of the ASA sectional committee in charge of the latter code. He strove mightily for what he believed to be right, and many have looked to him as their leader.

Change in Fire Hose Standard Is Considered by ASA

A revision of the Standard Specifications for Cotton Rubber-Lined Fire Hose for Public and Private Fire Department Use (L3-1935) has been proposed by the American Society for Testing Materials and the National Fire Protection Association.



Dr. Lloyd

Educated at the University of Pennsylvania where he received a bachelor of science degree in 1896, a PhD in physics in 1900, and the EE degree in 1908, he also studied at Harvard University and the University of Berlin.

He was a member of the staff of the National Bureau of Standards from 1902 until his death, except for six years when he was editor of the *Electrical Review*.

A distinguished physicist and engineer, Dr. Lloyd was the author of many research and engineering papers. He was an active member of many scientific and technical bodies, and a past president of the International Association of Electrical Inspectors and of the American Society of Safety Engineers.

—P. G. AGNEW

ciation, joint sponsors. The revision consists in removing the detailed methods of test and replacing them with references to the Standard Methods of Chemical Analysis of Rubber Products (ASTM D 297) and the Tentative Methods of Testing Rubber Hose (ASTM D 380-37 T). It is expected that when the specifications are reprinted these methods will be included.

Government Packaging Specifications Cause Trouble to Suppliers—

American Management Association Convention Is Told

SUPPLIERS are faced with many difficulties in connection with packing and shipping specifications for Army and Navy shipments, A. W. Luhrs, president of the Container Testing Laboratories, Inc., told the Packaging Conference and Exposition of the American Management Association, which was held at Chicago, April 1-4.

With a few possible exceptions, every one of the some 6,000 specifications listed by the Army and 3,000 specifications listed by the Navy for Federal, Army, and Navy purchases, provides for the packing of the article specified, Mr. Luhrs declared.

Recently, he said, the American Management Association sent out a questionnaire asking for specific information regarding packing practices on shipments going to the Army and Navy. Replies have now been received from 139 companies, of which 87 or 63 per cent have government contracts.

What They Said

Thirty of these 87 companies replied that they believe revisions should be made in the government specifications. Some of the complaints and changes mentioned include:

Many companies suggested that wirebound or fiber containers, rather than wood, should be specified.

An electrical company stated that certain special inner packing is required which does not conform to their usual practice.

A battery manufacturing company reported that on some orders for wet batteries a wooden house top box secured with brass screws and painted with acid-proof paint inside and out is required, whereas their commercial packing consists of wooden crates made in accordance with ICC regulations.

A floor-covering manufacturer stated that octagonal full-sided crates are specified. Square bottom, open side crates are normally used.

Two pharmaceutical companies state that government specifications require quantities other than the standard to be packed in each box.

A soap manufacturer reported that the government wooden box specifications are usually heavier than they would normally use. For example, for 56 pounds of soap powder, the government requires $\frac{5}{8}$ in. sides, top, and bottom, and $\frac{3}{4}$ in. ends whereas they ordinarily use boxes whose sides, top, and bottom are $\frac{5}{16}$ in. and ends $\frac{5}{8}$ in.

Several of the companies advised that the government specifications call for different sizes and shapes of containers than are generally used commercially.

A large meat-packing concern stated that they experience higher costs and delay in delivery on their can purchases because the government specifies heavier tin plate than is regularly required for domestic use.

Weight of the container was one of the most important problems presented in the replies to the questionnaire, Mr. Luhrs declared. Thirty of the 87 companies reporting on defense shipments stated that the weight of the empty container specified by the government exceeds that of the container regularly used, while 36 stated that the cost of the specified container is more than the normal container cost.

The large number of concerns reporting an increased container cost over 50 per cent is probably due to several factors, Mr. Luhrs explained.

"Most likely," he said, "is the fact that government specifications in many instances are more rigid than ordinary commercial specifications because of the added abuse the packing must be able to withstand such as many more and severe handlings and the possibility of storage in the open air."

Why Army Needs Vary

"Certain types of containers," he explained, "which are generally suitable for commercial use in this country might be quite unsatisfactory when subjected to the added demands of the armed forces. It is quite possible that some articles will be subjected not only to many reshipments but also to terrific heat in the tropics, intense cold in the Arctic regions, or excessive dampness and water both on land and on sea."

"The great variety of products and the different conditions to which their containers will be subjected indicate the complexity of the task involved in formulating packing specifications which do not unduly hamper the government supplier and at the same time insure delivery in good condition at the ultimate destination," Mr. Luhrs concluded.

Harrington Is Re-elected Chairman By ASA Mining Committee

Election of officers and reports on action now going forward on mining standards featured the annual meeting in February of the Mining Standardization Correlating Committee. Daniel Harrington, Chief of the Health and Safety Branch of the U.S. Bureau of Mines, was re-elected chairman of the Mining Standardization Correlating Committee. Lucien Eaton of the American Mining Congress and Richard Maize, Department of Mines, Harrisburg, Pennsylvania, were re-elected vice-chairmen.

Other members of the MSCC Executive Committee are: E. A. Holbrook, College of Engineering, University of Pittsburgh; M. D. Cooper, Division General Superintendent, Hillman Coal and Coke Company, Pittsburgh; and Thomas E. Lightfoot, Engineer in Charge of Accident Prevention and Compensation, Koppers Coal Company, Pittsburgh. On the MSCC, Mr. Holbrook represents the American Association for Labor Legislation; Mr. Cooper the Coal Mining Institute of America; and Mr. Lightfoot the National Safety Council.

Draft Standards Nearly Completed

Reports on projects under the jurisdiction of the Committee showed that a draft of a standard for Safety in Quarry Operations is nearing completion, and a draft standard for Electrical Equipment in Coal Mines is being prepared.

Subcommittees were appointed by the MSCC to study and make recommendations to the Com-

mittee on possible revisions of the following standards:

American Tentative Standard for Miscellaneous Outside Coal Handling Equipment (M10-1928)

American Tentative Standard for Wire Rope for Mines (M11-1927)

American Tentative Standard for Construction and Maintenance of Ladders and Stairs for Mines (M12-1928)

The American Recommended Practice for Rock Dusting Coal Mines to Prevent Coal Dust Explosions (M13-1925) was reviewed and the Committee voted to advise the ASA Standards Council that the standard has been found to be in accord with best current practice. The Committee recommended that this action be indicated on all copies of the standard.

A study of the status of work being done for the protection of workers against health hazards in mine atmospheres was authorized to be carried out by a subcommittee. The subcommittee members are: John B. Andrews, American Association for Labor Legislation, *Chairman*; B. F. Tillson, American Institute of Mining and Metallurgical Engineers; and W. T. Davis, National Conservation Bureau.

Changes in membership of the Mining Standardization Correlating Committee were reported at the meeting. Richard Maize is now representative of the Mine Inspectors Institute of America, with G. Moss Patterson as his alternate. W. T. Cameron has been appointed by the U.S. Department of Labor to act as alternate to V. A. Zimmer.

Recommendation to Simplify Marking of Gas Cylinders

The recently proposed Simplified Practice Recommendation on Color Marking for Anesthetic Gas Cylinders has been accorded the required degree of acceptance by those interested, and has been approved for promulgation, according to an announcement of the Division of Simplified Practice, National Bureau of Standards. The recommendation will be identified as Simplified Practice Recommendation R176-41.

This recommendation originated with the American Society of Anesthetists, and the Committee on Simplification and Standardization of Hospital Furnishings, Supplies and Equipment of the American Hospital Association, and has undergone some modification at the suggestion of the Medical Gases Committee of the Compressed Gas

Manufacturers Association and others. Color marking is provided for 6 medical gases and two mixtures commonly used for anesthesia.

The color markings are recommended to be applied to the shoulders of containers so as to be clearly visible from above, and apply only to small cylinders used on anesthesia machines.

The proposal is based on studies by the American Society of Anesthetists of the possible hazards incident to the use of a growing variety of anesthetic gases, and it is their opinion that some of the hazards will be obviated by insuring in every way against accidental confusion as to the kinds of gases being handled at any given time.

Pending printing, mimeographed copies of this Simplified Practice Recommendation may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington, D. C.

Tool Institute to Have Voice On ASA Mechanical Standards

The Metal Cutting Tool Institute, upon invitation by the American Standards Association, has appointed a representative on the ASA Mechanical Standards Committee, and as a member of the Committee will have an active

voice in ASA decisions on mechanical standards.

The Institute, with three major divisions, on Taps and Dies; on Drills and Reamers; and on Milling Cutters, has an important interest in the work of the Mechanical Standards Committee.

H. C. Hungerford, secretary of the Metal Cutting Tool Institute, has been named to represent the Institute on the MSC.

ASA Standards Activities

Approved Standards Available Since Publication of Our April Issue

Soldered-Joint Fittings American Standard A40.3-1941 45¢
125 and 250 lb Cast-Iron Screwed Fittings (Revision of Am. Tentative Standard B16d-1927) B16d-1941 40¢
Abbreviations for Scientific and Engineering Terms (Revision of Z10i-1932) American Standard Z10.1-1941 35¢
Motion Picture Standards and Recommended Practices Z22.2 through Z22.33 50¢

Standards Now Being Considered by Standards Council for ASA Approval

Manhole Frames and Covers for Subsurface Structures A35.1
Reinforced Gypsum Concrete A59
Reamers B5.14
Keyways for Holes in Gears B6.4
Cast-Iron Pipe Flanges and Flanged Fittings, Class 250 (Revision of B16b-1928)
Gage Blanks CS 8-41 (Revision of American Standard B47-1933)
Safety Rules for the Installation and Maintenance of Electrical Supply Stations, Part I of the National Electrical Safety Code C2, Part I
Installation and Maintenance of Electric Utilization Equipment, Part 3 of the National Electrical Safety Code C2, Part 3
Electric Fences, Part 6 of the National Electrical Safety Code C2, Part 6
Protection of Structures Containing Inflammable Liquids and Gases—Part 3 of Code for Protection Against Lightning (From status as American Tentative Standard to American Standard) C5, Part 3
Code for Electricity Meters (Revision of C12-1928)
Methods of Testing Electrical Insulating Oils (Revision of C59.2-1937)
Methods of Testing Molding Powders Used in Manufacturing Molded Electrical Insulators (ASTM D 392-38)
Commercial Standards for Sun Glass Lenses (CS 78-39; CS 79-39)
Inspection Requirements for Motor Vehicles (Revision of D7-1939)
Cotton Rubber Lined Fire Hose (Revision of American Standard L3-1935)
Body Sizes for Boys' Garments L11.1
Proposed American Recommended Practice for the Use of Explosives in Anthracite Mines M27
Safety Code for Grandstands Z20.1

Listing Requirements for Semi-Rigid Gas Appliance Tubing and Fittings (Revision of Z21.24-1937)
Approval Requirements for Portable Gas Baking and Roasting Ovens Z21.28
Listing Requirements for Furnace Temperature Limit Controls and Fan Controls Z21.29
Public Approval and Certification Procedures Z34
Calcined Gypsum for Dental Plasters (ASTM C 72-40)
Keene's Cement (ASTM C 61-40)
Gypsum Lath (ASTM C 37-40)
Gypsum Sheathing Board (ASTM C 79-34)
Gypsum Wall Board (ASTM C 36-34)
Methods of Testing Gypsum and Gypsum Products (ASTM C 26-40)

Draft Available

Proposed American Standard Safety Code for Exhaust Systems in Electroplating Operations. March 27, 1941 Draft. Z9/15.

New Projects Authorized

Attachment Plugs and Receptacles
Domestic Electric Flat Irons
Fastness of Colored Textiles
Household Electric Ranges
Water Heaters

New Project Being Considered

Spray Solution Used in Connection with Spray Systems for the Prevention of Offset on Printing Presses

Defense Emergency Standards

Standard Approved Since Publication of Our April Issue

Accuracy of Engine Lathes B5.16-1941

Standards Under Way

Application of Statistical Methods to Quality Control of Materials and Manufactured Products Z1
Allowable Concentration of Acetone Z37
Allowable Concentration of Azides, Lead and Sodium Z37
Allowable Concentration of Cadmium Z37
Allowable Concentration of Ether Z37
Allowable Concentration of Manganese Z37
Allowable Concentration of Tetryl Z37
Allowable Concentration of TNT Z37
Allowable Concentration of Xylol Z37

Announcing!

American Standard Abbreviations

A shorthand of engineering and scientific language

Developed by a national committee of engineers, editors, and scientists. Sponsored by the American Association for the Advancement of Science; American Institute of Electrical Engineers; American Society of Civil Engineers; Society for the Promotion of Engineering Education; American Society of Mechanical Engineers.

AMERICAN STANDARD ABBREVIATIONS FOR SCIENTIFIC AND ENGINEERING TERMS

Z10.1-1941..... 35¢

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